

**INTERMITTENT FEEDING TECHNIQUE FOR
INCREASING THE MELTING RATE OF POLYCRYSTALLINE SILICON**

ABSTRACT

A process for preparing a silicon melt in a crucible for use in growing a single
5 crystal silicon ingot by the Czochralski method. The crucible is first loaded with
chunk polycrystalline silicon and heated to partially melt the load. Granular
polycrystalline silicon is then fed onto the exposed unmelted chunk polycrystalline
silicon to complete the charge of silicon in the crucible. The granular polycrystalline
silicon is intermittently delivered using a plurality of alternating on-periods and off-
10 periods. During each on-period, granular polycrystalline silicon is flowed through a
feed device that directs the granular polycrystalline silicon onto the unmelted chunk
polycrystalline silicon. During each off-period, the flow of the granular polycrystalline
silicon is interrupted. The loaded chunk polycrystalline silicon and the fed granular
polycrystalline silicon are melted to form the silicon melt.